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# UNITED STATES DISTRICT COURT WESTERN DISTRICT OF TEXAS

# **AUSTIN DIVISION**

| OPTRASCAN, INC.               | )           | Cause No. 1-23-cv-00733           |
|-------------------------------|-------------|-----------------------------------|
| Plaintiff,<br>v.              | )           | COMPLAINT FOR PATENT INFRINGEMENT |
| MORPHLE LABS INC.  Defendant. | )<br>)<br>) | JURY TRIAL DEMANDED               |

Plaintiff OptraSCAN, Inc. ("Optrascan") complains of Defendant Morphle Labs Inc. ("Morphle" or "Defendant") as follows:

## I. NATURE OF LAWSUIT

1. This is a claim for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

# II. THE PARTIES

- 2. Plaintiff Optrascan is a corporation having a principal place of business located in San Jose, California. Optrascan is the owner, by assignment, of U.S. Patent Number 10,338,365 (the '365 Patent) issued July 2, 2019, and entitled "Slide Storage, Retrieval, Transfer, and Scanning System for a Slide Scanner" (copy attached as Exhibit A) and U.S. Patent Number 10,586,376 (the '376 Patent) issued March 10, 2020, and entitled "Automated Method of Predicting Efficacy of Immunotherapy Approaches" (copy attached as Exhibit B). Optrascan owns all rights, title, and interest in, and has standing to sue for infringement of the '365 Patent and '376 Patent.
- 3. On information and belief, Defendant Morphle is in the business of providing microscope slide scanners and is located New York City, New York and Bangalore, India.

# III. JURISDICTION AND VENUE

- 4. This is an action for patent infringement arising under the patent laws of the United States of America, Title 35 U.S.C. This Court has jurisdiction over the subject matter of the Complaint under 28 U.S.C. §§ 1331 and 1338(a).
- 5. Personal Jurisdiction over the defendant is proper in this Court in that Defendant has done, and continues to do, business in this district. Venue in this judicial district is proper under 28 U.S.C. §§ 1391(b), (c) and/or 1400(b) in that a substantial part of the events giving rise to the patent infringement claims herein have taken place and may still be taking place in this judicial district.

# IV. THE SUBJECT PATENTS

7. The '365 Patent and '376 Patent are directed to techniques to retrieve, transfer and scan slides for analysis. Such a method of treatment finds particular value in analyzing slides, for example, pathology slides of sections of a tissue in an automated and in a time efficient manner with fidelity of the results maintained. The patented technology thus makes it simpler and quicker, with more consistent results than prior methods.

- 8. The '365 Patent is entitled, "Slide Storage, Retrieval, Transfer, and Scanning System for a Slide Scanner" and contains multiple claims directed to the automated scanning of slides, including those with pathology tissue sections. The '365 Patent was properly and duly issued by the United States Patent and Trademark Office and the '365 Patent is presumed to be valid.
- 9. The '376 Patent is entitled, "Automated Method of Predicting Efficacy of Immunotherapy Approaches" and contains multiple claims directed to the automated scanning of slides, including those with pathology tissue sections. The '376 Patent was properly and duly issued by the United States Patent and Trademark Office and the '376 Patent is presumed to be valid.

# V. <u>DEFENDANT'S ACTS OF INFRINGEMENT</u>

- 10. Optrascan restates and incorporates by reference paragraphs 1 through 9 above as if fully re-stated herein.
- 11. The inventors of the '365 Patent, Abhijeet Gholap, Anagha Jadhav, Isha Doshi and Somwanshi were the first to identify and put into practice the use of an automated slide storage, retrieval, transfer and scanning system of the type and form of the claimed invention. Abhijeet Gholap, Anagha Jadhav, Isha Doshi and Somwanshi have assigned their rights in the '365 Patent to Optrascan.
- 12. The inventors of the '376 Patent, Abhijeet Gholap, Anagha Jadhav and Gurunath Kamble were the first to identify and put into practice the use of an automated method to predict the efficacy of an immunotherapy treatment of the type and form of the claimed invention. Abhijeet Gholap, Anagha Jadhav and Gurunath Kamble have assigned their rights in the '376 Patent to Optrascan.
- 13. Prior to their invention as claimed in the '365 Patent and '376 Patent, the scanning and analysis of slides was a timely process. The invention patented in the '365 Patent and '376 Patent made analysis of slides, including those with tissue sections easier and the result of the analysis, more accurate.
- 14. Defendant was informed of its infringing activity in writing no later than November 17, 2022, by Optrascan. Despite the written notice, Defendant has continued to undertake activities, including offering for sale and selling slide readers that infringe the two patents-in-suit. These offers

for sale and sales have been made throughout the United States and include offer for sale and sales of the infringing slide readers in Texas and more specifically, within Austin, Texas. Defendant has continued to infringe the '365 Patent (Exhibit A – Infringement Claim Chart '365 Patent) and '376 Patent (Exhibit B – Infringement Claim Chart '376 Patent) as Defendant is well aware of the significant benefits provided by Optrascan's patented technology to Defendant's infringing slide readers.

- 15. Indeed, knowing that the inventive patented technology provided significant benefits to Defendant's slide reader, including the Morpholens 6, Morpholens 240 and Hemolens, Defendant has decided to proceed with using the inventive method without obtaining the consent of Optrascan. Instead, Defendant, with full knowledge of the '365 Patent's and '376 Patent's existence, have willfully infringed the '365 Patent and '376 Patent to the great detriment and loss of Optrascan.
- 16. Defendant has been on notice of the '365 Patent and Optrascan's claims of infringement, and, for at least this reason, Defendant's actions are believed to be willful and undertaken with the intent to infringe the '365 Patent.
- 17. Defendant has been on notice of the '376 Patent and Optrascan's claims of infringement, and, for at least this reason, Defendant's actions are believed to be willful and undertaken with the intent to infringe the '376 Patent.
- 14. Defendant's direct infringement and inducement to infringe have been willful and have deliberately injured and will continue to injure Optrascan unless and until the Court enters an injunction prohibiting further infringement and, specifically, enjoining further use, sale and/or offer for sale of the patented method that fall within the scope of the '365 Patent's and '376 Patent's claims.

## VI. PRAYER FOR RELIEF

WHEREFORE, Optrascan asks this Court to enter judgment against Defendant and against its subsidiaries, affiliates, agents, servants, employees and all persons in active concert or participation with them, granting the following relief:

- A. An award of damages adequate to compensate Optrascan for the infringement that has occurred, together with prejudgment interest from the date infringement of the '365 Patent and '376 Patent began;
  - B. Increased damages as permitted under 35 U.S.C. § 284;
- C. A finding that this case is exceptional and an award to Optrascan of its attorneys' fees and costs as may be appropriate and as provided by 35 U.S.C. § 285;
- D. A permanent injunction prohibiting further infringement, inducement and contributory infringement of the '365 Patent and '376 Patent.
- E. Pre-judgment interest calculated from the time of the first occurrence of any infringing activity through and until entry of judgment; and
  - F. Such other and further relief as this Court or a jury may deem proper and just.

# VII. <u>JURY DEMAND</u>

Optrascan demands a trial by jury on all issues presented in this Complaint.

Dated: June 28, 2023

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# U.S. PATENT No. 10,338,365

# "Slide Storage, Retrieval, Transfer and Scanning System for a Slide Scanner"

#### **CLAIM CHART**

# **MORPHLE**

The following claim chart is for illustrative purposes only and sets out Plaintiff's current views as to infringement of at least claim 1 of the '365 Patent. Plaintiff will supplement this chart as needed as the action progresses and reserves the right to make changes as needed as discovery progresses and further information comes to light.

#### **OptraScan Claim**

#### Morphle Technology

- 1. A slide storage, retrieval, transfer and scanning system for a slide scanner comprising: a slide scanning stage configured to receive a slide into a slide holder below a microscope objective and move the slide holder in relation to the microscope objective in order to scan the slide;
- a slide storage assembly configured to store at least one slide basket, wherein each of the at least one slide basket is configured to store a plurality of slides;
- a slide basket transfer assembly configured to retrieve and store the at least one slide basket from and into the slide storage assembly, respectively;

1. Morphle provides a slide storage, retrieval, transfer and scanning system for a slide scanner comprising: a slide scanning stage that receives a slide into a slide holder below a microscope objective and moves the slide holder (via a lead screw) in relation to the microscope objective in order to scan the slide;

Morphle provides a slide storage assembly (i.e., housing) configured to store at least one slide basket (i.e., slide cassette), wherein each of the at least one slide basket (i.e., slide cassette) is configured to store at least six slides;

Morphle provides a slide basket transfer assembly configured to store at least one slide basket as it grips the slide basket (i.e., slide cassette) and retrieves the slide basket for scanning beneath the microscope objective, and after scanning, returns the slide basket (i.e., slide cassette) into the slide storage assembly (i.e., housing) respectively;

Morphle provides a slide transfer assembly that is integrally formed with the slide basket transfer assembly and a slide basket holder configured to retrieve a slide from the slide basket transfer assembly, deliver the slide to the slide scanning stage of a slide scanner, and return the slide from the slide scanning stage to the slide basket transfer assembly;

Morphle provides a slide basket holder of the slide basket transfer assembly being configured to move vertically along a Z axis in order to transfer a slide basket from the slide storage assembly (i.e., housing) to the slide transfer assembly; and a support base

a slide transfer
assembly configured to
retrieve a slide from the
slide basket transfer
assembly, deliver the
slide to the slide
scanning stage of a slide
scanner, and return the
slide from the slide
scanning stage to the
slide basket transfer
assembly;

a slide basket holder of the slide basket transfer assembly being configured to move vertically along a Z axis in order to transfer a slide basket from the slide storage assembly to the slide transfer assembly; and a support base of the slide transfer assembly being configured to move horizontally in an X-Y plane in order to transfer a slide from the slide basket transfer assembly to the slide scanning stage of the slide scanner, wherein the Z axis is perpendicular to the X-Y plane.

integrally formed with the slide transfer assembly and being configured to move horizontally in an X-Y plane in order to transfer a slide from the slide basket transfer assembly integrally formed with the slide transfer assembly to the slide scanning stage of the slide scanner, wherein the Z axis is perpendicular to the X-Y plane.

#### By Example: "MorphoLens 240 Demo Video"

Morpholens 240 slide scanner | Morphle Digital Pathology (morphlelabs.com) The demo video displays and demonstrates a slide scanning stage configured to receive a slide into a slide holder below a microscope objective in order to scan the slide. This is shown in at least timestamps 0:30 to 0:41 of the video.

The demo video further displays and demonstrates a slide storage assembly configured to store at least one slide basket, wherein each of the at least one slide basket is configured to store a plurality of slides. This is shown in at least timestamps 0:17-0:28 and 0:58-1:02 of the demo video and further shown in the screen shot below:



The demo video also displays and demonstrates a slide basket transfer assembly configured to retrieve and store the at least one side basket from and into the slide storage assembly, respectively. This is shown in at least timestamps 0:30-0:35 of the demo video. The slide basket transfer assembly of Morphle retrieves a slide basket (functionally equivalent slide cassette) for scanning by a slide scanner as shown in the demo video and the screen shots below:





The demo video further displays and demonstrates a slide transfer assembly configured to retrieve a slide from the slide basket transfer assembly, deliver the slide to the slide scanning stage of the slide scanner, and return the slide from the slide scanning stage to the slide basket transfer assembly. This structure and functionality is shown in at least timestamps 0:30-0:35 of the demo video. As the lead screw turns, an individual slide is translated beneath a slide scanner via the slide transfer assembly which is integrated with a slide basket holder, therefore operating as a slide transfer assembly within the metes and bounds of the claimed limitations.

The demo video also displays and demonstrates a slide basket holder of the slide basket transfer assembly being configured to move vertically along a Z axis in order to transfer a slide basket from the slide storage assembly to the slide transfer assembly; and a support base of the slide transfer assembly being configured to move horizontally in an X-Y plane in order to transfer a slide from the slide basket transfer assembly to the slide scanning stage of the slide scanner, wherein the Z axis is perpendicular to the X-Y plane. This is shown in at least timestamps 0:29-0:35 of the demo video. Vertical movement of the slide basket holder is inherent given that the slide basket transfer assembly must elevate to scan

the remaining batch of slide baskets. The slide basket holder is integral with the slide basket transfer assembly as shown in the demo video and screen shot below:



7. The slide storage, retrieval, transfer and scanning system for a slide scanner as claimed in claim 1 comprising: the slide basket transfer assembly comprising a track and a slide basket holder;

the slide basket holder being configured to move along the track;

and the slide basket holder being configured to removably receive a slide basket.

7. Morphle provides a slide basket transfer assembly comprising a track and a slide basket holder; the slide basket holder being configured to move along the track;

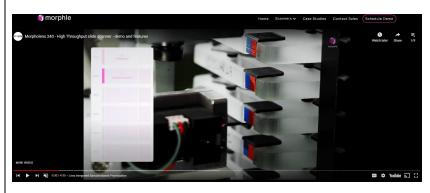
Morphle provides the slide basket holder being configured to removably receive a slide basket.

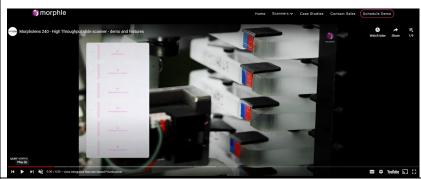
#### By Example: "MorphoLens 240 Demo Video"

Morpholens 240 slide scanner | Morphle Digital Pathology (morphlelabs.com) The MorphoLens 240 demo video displays and demonstrates a slide basket transfer assembly comprising a track and a slide basket holder; the slide basket holder being configured to move along the track. This is shown in at least timestamps 0:29-0:39 and in the screen shot reproduced below where the track is clearly visible in the bottom of the frame which guides the movement of the slide basket transfer assembly, and therefore the slide basket holder, as it holds slides stationary for scanning.



The demo video further displays and demonstrates the slide basket holder being configured to removably receive a slide basket. This is shown in at least timestamps 0:28-0:32 of the demo video and in the screen shots produced immediately below. In the first (upper) screen shot, the slide basket holder is uncoupled from a slide basket. In the second (lower) screen shot, the slide basket holder is coupled with the slide basket thereby displaying reception of the slide basket.





8. The slide storage, retrieval, transfer and scanning system for a slide scanner as claimed in claim 7 comprising: the slide basket holder being configured to traverse in a vertical direction along the track.

8. Morphle provides a slide basket holder being configured to traverse in a vertical direction along the track.

By Example: "MorphoLens 240 Product Features"

Morpholens 240 slide scanner | Morphle Digital Pathology (morphlelabs.com)

The MorphoLens 240 Product Features section of their website displays and demonstrates that slides may be scanned across multiple Z-levels at each field. Therefore the slide basket holder is configured to traverse in a vertical direction along the track such that the slide basket holder may retrieve batch-loaded slides at differing or stratified levels within the slide storage assembly.



# U.S. PATENT No. 10,586,376

# "Automated Method of Predicting Efficacy of Immunotherapy Approaches"

#### **CLAIM CHART**

# **MORPHLE**

The following claim chart is for illustrative purposes only and sets out Plaintiff's current views as to infringement of at least claim 1 of the '376 Patent. Plaintiff will supplement this chart as needed as the action progresses and reserves the right to make changes as needed as discovery progresses and further information comes to light.

#### **OptraScan Claim**

#### Morphle Technology

- 1. An automated method of predicting efficacy of immunotherapy approaches comprises the steps of:
- (A) providing an automated slide scanning system and a processing device, wherein the automated slide scanning system comprises an image acquisition unit, and wherein the automated slide scanning system is electronically
- (B) receiving a sample slide through the automated slide scanning system, wherein a tissue sample is mounted to the sample slide;

connected to the

processing device;

(C) acquiring at least one slide image of the tissue sample through 1. Morphle provides an automated slide scanning system and a processing device, wherein the automated slide scanning system comprises an image acquisition unit, and wherein the automated slide scanning system is electronically connected to the processing device;

Morphle provides the receiving of a sample slide through the automated slide scanning system, wherein a tissue sample is mounted to the sample slide;

Morphle provides the acquiring of at least one slide image of the tissue sample through the image acquisition unit;

Morphle provides the execution of at least one cell segmentation process on the slide image through the processing device in order to identify a plurality of cells from the slide image;

Morphle provides analyzing a plurality of cells with at least one cell classification algorithm through the processing device in order to identify a tumor cell percent positivity value and an immune cell percent positivity value;

Morphle provides calculating a treatment efficacy score from the tumor cell percent positivity value and the immune cell percent positivity value.

#### By Example: HemoLens product website

Hemolens (morphlelabs.com) The Hemolens product website displays and demonstrates the provision of an automated slide scanning system and a processing device, wherein the automated slide scanning system comprises an image acquisition unit, and wherein the automated slide scanning system is electronically connected to the processing device. This is shown in the screen shots reproduced immediately below in which an automated slide scanning system is depicted with the capability of Al-

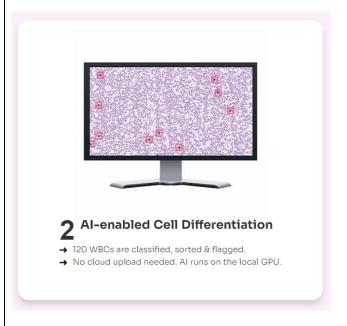
the image acquisition unit;

- (D) executing at least one cell segmentation process on the slide image through the processing device in order to identify a plurality of cells from the slide image;
- (E) analyzing the plurality of cells with at least one cell classification algorithm through the processing device in order to identify a tumor cell percent positivity value and an immune cell percent positivity value;

and (F) calculating a treatment efficacy score from the tumor cell percent positivity value and the immune cell percent positivity value. enabled cell differentiation of slide images obtained by an image acquisition unit and analyzed via a processing device.



- **1** Walk-away Scanning by the technician
- → Auto monolayer / feather-edge detection.
- → Auto Oil dispensing.
- → Auto-cell detection + Multi-objective scanning.





The product website further displays and demonstrates receiving a sample slide through the automated slide scanning system, wherein a tissue sample is mounted to the sample slide. This is shown in the "The All-Digital Workflow" and "Technical Specifications" sections of the product website and in the screen shot reproduced immediately below:

#### **Technical Specifications**

Slide Capacity

Single slide batch with soft sideways clamping supporting

a. Slides with / without coverslips

b. Slide thickness from 0.8 to 2mm  $\,$ 

The product website also displays and demonstrates the acquisition of at least one slide image of the tissue sample through the image acquisition unit. This is shown in at least the "The All-Digital Workflow" and "Technical Specifications" sections of the product website.

The product website further displays and demonstrates the execution of at least one cell segmentation process on the slide image through the processing device in order to identify a plurality of cells from the slide image. This is shown in at least the "The All-Digital Workflow" section which states "120 WBCs are classified, sorted & flagged" under subsection 2 "Al-enabled Cell Differentiation" and further states "Abnormal cells are pre-flagged and sorted" under subsection 3: "Tele-reported by Specialists."

The product website also displays and demonstrates analyzing the plurality of cells with at least one cell classification algorithm through the processing device in order to identify a tumor cell percent positivity value and an immune cell percent positivity value. This is shown in subsections 2 and 3 of the "The All-Digital Workflow" section of the product website. As

stated in subsection 3: "Abnormal cells are pre-flagged and sorted." In addition to Al-enabled cell differentiation provided by Morphle, it is clear and apparent the technology of Morphle as disclosed on the product website comprises at least one cell classification algorithm that identifies a tumor cell percent positivity value and an immune cell percent positivity value.

- 2. The automated method of determining potential efficacy of immunotherapy approaches as claimed in claim 1 comprises the step of: analyzing the plurality of cells with at least one cell classification algorithm through the processing device in order to identify at least one biomarker.
- 2. Morphle provides the ability to analyze a plurality of cells with at least one cell classification algorithm through the processing device in order to identify at least one biomarker.

# By Example: HemoLens product website

Hemolens (morphlelabs.com) The Hemolens product website displays and demonstrates the ability to analyze a plurality of cells with at least one cell classification algorithm through the processing device in order to identify at least one biomarker. This is shown in at least subsections 2 and 3 of the "The All-Digital Workflow" sections of the product website. The ability to sort, flag, and pre-flag cells, cell-types, and other abnormalities is consistent with the ability to identify at least one biomarker.

- 4. The automated method of determining potential efficacy of immunotherapy approaches as claimed in claim 1 comprises the steps of: wherein the at least
- one slide image is a whole slide image of the sample slide; executing the at least one cell segmentation process on the whole slide image through the processing device in order to identify a plurality of cell nests
- wherein the plurality of cells identified from the whole slide image comprises a heterogeneous cell population comprising

from the slide image,

4. Morphle provides a method comprising the steps of: wherein the at least one slide image is a whole slide image of the sample slide; executing the at least one cell segmentation process on the whole slide image through the processing device in order to identify a plurality of cell nests from the slide image.

Morphle provides wherein the plurality of cells identified from the whole slide image comprises a heterogeneous cell population comprising tumor cells and non-tumor cells, and wherein the plurality of cell nests is identified from the heterogeneous cell population; and segregating the cell nests into tumor regions and non-tumor regions.

#### By Example: HemoLens product website

Hemolens (morphlelabs.com)

The HemoLens product website displays and demonstrates the ability to capture a whole slide image of a sample slide and execute at least one cell segmentation process on the whole slide image through the processing device in order to identify a plurality of cell nests from the slide image. This is shown in at least the sections "The All-Digital Workflow" and "Designed for Maximum Utility with Minimal AI" of the product website, which discloses flagging and sorting of cells and cell abnormalities, thereby demonstrating the ability to identify a plurality of cell nests from the slide image in addition to the remaining limitations of claim 4 of the '376 patent.

tumor cells and nontumor cells, and wherein the plurality of cell nests is identified from the heterogeneous cell population; and segregating the cell nests into tumor regions and non-tumor regions. The HemoLens product website further displays and demonstrates wherein the plurality of cells identified from the whole slide image comprises a heterogeneous cell population comprising tumor cells and non-tumor cells, and wherein the plurality of cell nests is identified from the heterogeneous cell population; and segregating the cell nests into tumor regions and non-tumor regions. This is shown in at least sections "The All-Digital Workflow" and "Designed for Maximum Utility with Minimal Al" of the product website, which discloses the sorting and flagging of cells and abnormalities and therefore provides the ability to segregate cell nests into tumor and non-tumor regions in addition to meeting all of the remaining limitations of claim 4.

5. The automated method of determining potential efficacy of immunotherapy approaches as claimed in claim 1 comprises the steps of:

5. Morphle provides a method comprising the steps of: wherein the at least one slide image is a whole slide image of the sample slide; executing the at least one cell segmentation process on the slide image through the processing device in order to identify tumor cells and immune cells from the plurality of cells.

steps of:
wherein the at least
one slide image is a
whole slide image of
the sample slide;
executing the at least
one cell segmentation
process on the slide
image through the
processing device in
order to identify tumor
cells and immune cells
from the plurality of
cells.

# By Example: HemoLens product website

Hemolens (morphlelabs.com)

The HemoLens product website displays and demonstrates wherein the at least one slide image is a whole slide image of the sample slide; executing the at least one cell segmentation process on the slide image through the processing device in order to identify tumor cells and immune cells from the plurality of cells. This is shown in at least sections "The All-Digital Workflow" and "Designed for Maximum Utility with Minimal Al" of the product website. These sections display the ability to differentiate, classify, sort and flag cells and abnormalities, and therefore disclose the ability to identify tumor cells and immune cells from a plurality of cells in addition to the remaining limitations of claim 5.

6. The automated method of determining potential efficacy of immunotherapy approaches as claimed in claim 1 comprises the steps of:

6. Morphle provides a method comprising the steps of: executing at least one masking algorithm through the processing device in order to identify a plurality of cellular and subcellular structures of interest from the slide image.

executing at least one masking algorithm through the processing device in order to identify a plurality of cellular and subcellular structures of interest from the slide image.

# By Example: HemoLens product website

Hemolens (morphlelabs.com)

The HemoLens product website displays and demonstrates the ability of executing at least one masking algorithm through the processing device in order to identify a plurality of cellular and subcellular structures of interest from the slide image. This is shown in at least the "The All-Digital Workflow" and "Designed for Maximum Utility with Minimal Al" of the product website. These sections showcase the ability to identify a plurality of cellular and subcellular structures of interest from a slide image through Al-enabled cell differentiation and therefore meet the claimed limitation of executing at least one masking algorithm in addition to the remaining limitations of claim 6.

11. The automated method of determining potential efficacy of immunotherapy approaches as claimed in claim 1 comprises the steps of: applying a plurality of image filters to the slide image through the processing device in order to produce a plurality of filtered and segmented slide images; and displaying at least one of the plurality of filtered and segmented slide images on a

display device.

11. Morphle provides a method comprising the steps of: applying a plurality of image filters to the slide image through the processing device in order to produce a plurality of filtered and segmented slide images; and displaying at least one of the plurality of filtered and segmented slide images on a display device.

#### By Example: HemoLens product website

Hemolens (morphlelabs.com)

The HemoLens product website displays and demonstrates applying a plurality of image filters to the slide image through the processing device in order to produce a plurality of filtered and segmented slide images; and displaying at least one of the plurality of filtered and segmented slide images on a display device. This is shown in at least the screen shot reproduced below which clearly displays image filtering processes and the display of at least one of filtered and segmented slide images on a display device.



- Pick specific etiologies from RBC morphometric parameters
- → Filter based on diameters to hunt for microcytic and macrocytic anemias
- → Sort cells based on elongation to quickly detect sickle cells
- → Surface irregularity based sorting to check for Poikilocytosis